



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/563,314	08/01/2006	Siew Kim Lee	DAIRY88.015APC	6941

20995 7590 07/07/2011  
KNOBBE MARTENS OLSON & BEAR LLP  
2040 MAIN STREET  
FOURTEENTH FLOOR  
IRVINE, CA 92614

EXAMINER
----------

KRAVETS, JULIYA

ART UNIT	PAPER NUMBER
----------	--------------

1781

NOTIFICATION DATE	DELIVERY MODE
-------------------	---------------

07/07/2011

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

jcartee@kmob.com  
efiling@kmob.com  
eOAPilot@kmob.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/563,314	<b>Applicant(s)</b> LEE ET AL.	
	<b>Examiner</b> JULIYA KRAVETS	<b>Art Unit</b> 1781	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-19 and 21-26 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-19 and 21-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>12/29/2005 and 01/21/2009</u> . | 6) <input type="checkbox"/> Other: ____.  |

## DETAILED ACTION

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 04/12/2010 has been entered.

### ***Listing of Claims***

2. Claims 1-19 and 21-26 are pending. New claims 22-26 have been added. Claim 20 remains cancelled.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. **Claim 4 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.**

5. Regarding claim 4, the phrase "wherein the ratio of whey protein to casein is within the range of 0.05-0.75" renders the claim indefinite. It is unclear if "0.05-0.07" is

Art Unit: 1781

a ratio of whey protein to casein, or a range of a non-clearly defined ratio. It is not clear what the ratio is based: volume, weight, etc...

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. **Claims 1-4, 8-11, 16-19 and 21-26 are rejected under 35 U.S.C. 102(b) as being anticipated by Vandeweghe et al. (U.S. 2001/0043967) as evidenced by FDA (Approximate pH of Foods and Food Products), USDA nutrient data laboratory and Cornell University (Milk Protein)**

8. **Regarding claims 1, 3 and 8-11** Vandeweghe et al. teaches a "yogurt production process" (title). The yogurt is made by

a. providing milk (a dairy starting material comprising casein and a quantity of undenatured whey protein) [0004].

b. The pH is within the range of 5.0-8.0. Hereby used as evidentiary reference, the FDA cites milk from cows as having a pH 6.40-6.80. Thus, no pH adjustment is required.

c. Then, the material is subjected to a cooking step (claim 1) and

- d. the pH is reduced by addition of an acid or acidulant (claim 1).
- e. Finally, the material is “packaged for sale” [0011] and the yogurt can be in liquid form [0033]. The product does not have the whey removed.

9. **Regarding claims 2 and 21**, Vendeweghe et al. teaches that the process as disclosed above “can be used in the production of any dairy fermented product”. [0033] In addition, the examiner takes the stance that the product of Vendeweghe is a “cheese-like product” and can be considered a cheese, as it is a milk based product produced by coagulating casein by a curdling process. Although cheese is usually considered as the curd portion of an acidified milk product, where the whey is removed, a cheese with the whey intact can still be considered a cheese (i.e. cottage cheese).

10. **Regarding claim 4**, hereby used as evidentiary reference, Cornell University discloses that milk from cow has an approximate whey protein to casein ratio of 18:82.

11. **Regarding claims 16-18**, the cooking temperature is between about 180° F to about 200° F (82.2° C to 93.3° C) and the cooking time is between about 2 to about 12 minutes. [0009]

12. **Regarding claim 19**, the product is packaged [0011], whereby the material can set, and the steps are performed without removing whey.

13. **Regarding claims 22 and 24**, Hereby used as evidentiary reference, the USDA nutrient data laboratory discloses whole milk (the material subject to cooking) to have a protein to fat ratio of 3.15:3.27 (approximately 1:1).

14. **Regarding claim 23**, the pH in step (b) is within the range of 5.0-8.0. Hereby used as evidentiary reference, the FDA cites milk from cows as having a pH 6.40-6.80.

Art Unit: 1781

Thus, no pH adjustment is required. Furthermore, if there is a desire to adjust the pH, the examiner takes the stance that the process of adjusting the pH of a food by adding a food grade acid or base is known in the art.

15. **Regarding claim 25**, the cooking step involves heating the product to a temperature above 82.2° C. At such a temperature the casein and whey proteins are denatured and thus the casein whey interaction is modified.

**Regarding claim 26**, the production process has the conditions so as to provide “beneficial (desired) flavor, texture and other organoleptic qualities” to the product.

[0006]

### ***Claim Rejections - 35 USC § 103***

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

17. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

**18. Claims 5-7 and 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vandeweghe et al. (U.S. 2001/0043967) as evidenced by FDA (Approximate pH of Foods and Food Products), USDA nutrient data laboratory and Cornell University (Milk Protein).**

19. Vandeweghe et al. teaches the limitations of claims 1, 11, and 9 as discussed above.

20. **Regarding claims 5-7**, whole milk from a cow has a water content of about 88 wt.% and a protein content of about 3.15 wt.% (as evidenced by USDA nutrient data laboratory), of which casein is approximately 82% (as evidenced by Cornell University). Thus a typical cow milk product has approximately 2.6 wt. % casein naturally (82% of the approximate 3.15% protein). While milk from cows naturally has close to 3% casein, the casein content of milk can be greater. The examiner takes the stance that it is well known in the art how to dehydrate milk in order to decrease the water content and increase solid content, and also well known in the art how to use reduced fat milk in creating a dairy product. Such milk products would have a greater proportion of casein protein. One of ordinary skill in the art would at the time the invention was made would find it obvious to use a dairy product such as milk with a casein content of about 3 wt.%, or a modified milk with a slightly greater amount of casein, of for example 5 wt. % casein. The motivation for this would be for economic, textural, organoleptic, health, and flavor preferences; for example, using a dehydrated milk for ease and cost of transportation, or a skim milk in order to add less fat to the product.

21. **Regarding claims 12-15**, after cooking, the composition is acidified after reaching a pH of about 4.8 to about 5.2 and "the final target pH can vary." [0024] It would be obvious to one of ordinary skill in the art to add acid to bring the dairy product from a pH of about 5.2 to a final pH of about 5.0. The motivation for this would be to affect the flavor of the dairy product. For example, a yogurt type product is more acidic than a cottage cheese product. Both products are consumed for their particular tastes.

22. **Claims 1-18 and 21-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ottenhof (EP 0 162 498) as evidenced by USDA nutrient data laboratory and Cornell University (Milk Protein).**

23. **Regarding claim 1**, Ottenhof discloses a process for preparing a dairy product without removing whey comprising:

- a. providing a dairy starting material comprising casein and undenatured whey protein (p.1, lines 5-10);
- b. adjusting the pH to a preselected point between 5-8 (p. 1, lines 5-10);
- c. subjecting the material with the desired pH to a cooking step (p. 1, lines 9-11);
- d. adjusting the pH of the cooked product to 4.5-7.5 (p. 1 line 12, line 25);
- f. processing the pH 4.5-7.5 product to form the final product (p.8 lines 36-38)

24. Ottenhof teaches that some whey proteins are kept with the curds. Thus, not all of the whey is removed. However, Ottenhof fails to disclose that the liquid portion of the



Art Unit: 1781

whey can be kept with the curds, and shows examples of cheese produced with the liquid portion of the whey removed. While many cheeses have the curds removed; various cheeses such as cottage cheese do not remove the whey from the curds.

Ottenhof teaches that the invention can be used to produce cottage cheese (page 7) but does not disclose if the rest of the whey is kept with the curds.

25. One of ordinary skill in the art at the time the invention was made would find it obvious to keep the whey with the curds after making the product as taught by Ottenhof et al. Such a variation is a well known matter of preference in the dairy industry.

Cheeses such as cottage cheese, curds and whey, sour milks and yogurt type dairy products that are made using the method similar to that as taught by Ottenhof are well known in the art and such products do not have the whey removed. For the motivation of texture and organoleptic properties, which are a matter of preference, one of ordinary skill in the art at the time the invention was made would find it obvious to create the dairy product as taught by Ottenhof, with the whey in tact.

26. **Regarding claims 2 and 21**, the product is a cheese or cheese like product (p.6 line 26-p.7 line 9, p. 7 lines 10-32).

27. **Regarding claim 3**, the dairy starting material is skim milk (p. 2 line 6), or a mixture of skim milk and whey protein (p. 2 line 7).

28. **Regarding claim 4**, hereby used as evidentiary reference, Cornell University discloses that milk from cow has an approximate whey protein to casein ratio of 18:82.

29. **Regarding claims 5-7**, whole milk from a cow has a protein content of about 3.15 wt. % and water content of about 88 wt. % (as evidenced by USDA nutrient data

Art Unit: 1781

laboratory), of which casein is approximately 82% (as evidenced by Cornell University). Thus a typical cow milk product has approximately 2.6 wt. % casein naturally. While milk from cows naturally has close to 3% casein, the casein content of milk can be greater. The examiner takes the stance that it is well known how to dehydrate a milk in order to decrease the water content and increase solid content, or for example to use a skim milk as taught by Ottenhof. Such milk products would have a greater proportion of casein protein. One of ordinary skill in the art at the time the invention was made would find it obvious to use a dairy product such as milk with a casein content of 3 wt.%, or a modified milk with a slightly greater amount of casein. The motivation for this would be for economic, textural, organoleptic, health, and flavor preferences; for example, using a dehydrated milk for ease and cost of transportation, or a skim milk in order to add less fat to the product.

30. **Regarding claims 8-10**, the pH at the end of step (b) is 6.8 (p. 1 line 9).

31. **Regarding claims 11-15**, the acid or alkali is added after the cooking to achieve a pH of 5.4 (p. 4, line 14).

32. **Regarding claim 16**, heating the mixture to 60 °C or higher is disclosed (p. 4, line 35, p. 8, line 27).

33. **Regarding claims 17 and 18**, a cooking time of 15 minutes is disclosed (p. 8, line 27).

34. **Regarding claims 22 and 24**, Hereby used as evidentiary reference, the USDA nutrient data laboratory discloses skim milk (the material subject to cooking) to have a protein to fat ratio of 0.18:3.40.

Art Unit: 1781

35. **Regarding claim 23**, the pH is adjusted to a preselected point between 5-8 (p. 1, lines 5-10)

36. **Regarding claim 25**, the casein and whey proteins are heated to 60 °C or higher (p. 4, line 35, p. 8, line 27). Thus the proteins are denatured and the protein interaction is modified.

37. **Regarding claim 26**, the length as discussed in claims 17 and 18 above, the temperature as discussed in claim 16 above and the pH is modified as discussed in claims 9-10 above. These parameters are selected in order to create a cheese with the desired physical properties. Also, the examiner takes the stance that such parameters affect the final texture.

38. **Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ottenhof (EP 0 162 498) in view of Hormann et al. (US #6,036,979).**

39. As described for claim 1 above, Ottenhoff discloses a method for preparing a cheese product comprising providing a dairy material comprising whey and casein proteins, adjusting the pH, subjecting the material to a cooking step, and adjusting the pH of the cooked product.

40. Ottenhoff fails to disclose placing the pH 4.5-7.5 product into packaging while still liquid and providing conditions which allow the packaged product to set.

41. Hormann et al. discloses a method for producing a cheese product comprising adding the cheese product to containers while still liquid, and then providing conditions which allow the packaged product to set (Column 2, lines 1-12). Hormann et al.

Art Unit: 1781

teaches using a dairy starting material comprising casein and undenatured whey protein (skim milk and cream), and cooking and acidifying the product.

42. Both Ottenhof and Hormann et al. teach dairy cheese like products that are produced by cooking and acidifying the dairy starting material. When creating the product of Ottenhof, one of ordinary skill in the art would be motivated to market the product and thus would need to store the product. One of ordinary skill in the art would look to the art to find out how to best store the product. Hormann et al. teaches packaging the product while still liquid. Thus, one of ordinary skill in the art would at the time the invention was made would find it obvious to package the product of Ottenhoff as by the method as taught by Hormann et al.

### ***Response to Arguments***

43. Applicant's arguments file on 04/12/2010 with respect to claims 1-19 and 21 have been fully considered and are persuasive. The rejection under 103(a) as being unpatentable over Wahlgren (U.S. 6,365,205) has been withdrawn.

44. Also, Applicant's arguments filed on 01/21/2009, Applicant's arguments have been fully considered but are moot in view of the new ground(s) of rejection.

45. Regarding Applicant's arguments filed on 01/21/2009, Applicant argued that "Applicants respectfully disagree with the Examiner's characterization of Ottenhof because the process of Ottenhof teaches that whey is removed during the processing

Art Unit: 1781

steps. Ottenhof teaches a process for preparing a product containing casein and whey protein, but some whey is separated from the curd and thus is removed in the process. For example, Ottenhof states "[t]he curd can be separated in a known manner, for example by means of decanting or centrifuging or by means of sieving or gauze filtering." Page 4, 11.24-26. It would be clear to one of skill in the art that the curd is being separated from the whey..."

46. Ottenhof teaches a process for "preparing a product containing casein and whey protein" (page 1, lines 5-6). Although Ottenhof discloses examples including cheese type products where the curd is separated from the liquid portion of the whey, the final product contains parts of the whey, particularly the whey proteins. The final product of Ottenhof contains whey protein; parts of the whey are kept in tact. Furthermore, prior to when the cheese is separated from the liquid, the product as of Ottenhof, meets the limitations as claimed by applicant in claim 1, (a)-(d). Thus such a dairy cheese like product, with the whey in tact, would be obvious to one of ordinary skill in the art. In addition, although Ottenhof provides examples of more solid cheeses which do not include the liquid whey portion, the examiner takes the stance that this is a matter of preference which is well known to one of ordinary skill in the art.

47. One of ordinary skill in the art at the time the invention was made would find it obvious to keep the whey with the curds after making the product as taught by Ottenhof et al. Such a variation is a well known matter of preference in the dairy industry. Cheeses such as cottage cheese, curds and whey, sour milks and yogurt type dairy products that are made using the method similar to that as taught by Ottenhof are well

Art Unit: 1781

known in the art, and such products do not have the whey removed. Thus, one of ordinary skill in the art would be motivated to create the dairy product as taught by Ottenhof, with the whey in tact, for the motivation of flavor, texture and organoleptic properties.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JULIYA KRAVETS whose telephone number is (571)270-5681. The examiner can normally be reached on 9am-6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Larry Tarazano can be reached on (571)272--1515. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/D. Lawrence Tarazano/  
Supervisory Patent Examiner, Art Unit 1781

/J. K./  
Examiner, Art Unit 1781